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ABSTRACT

This paper examines the notion of teacher beliefs as complex ideological systems which have a bearing on actions. The focus is on the beliefs that students bring into their formal teacher education program, which are based on their predominantly authoritarian and didactic schooling experience. These students enter teacher education with unreflective and passive ways of knowing, and with beliefs about good teaching which were formed by their previous teachers. A discussion is presented on the reflective teaching program at the University of Wisconsin, Madison, which attempts to implement a genuinely reflective curriculum seeking to induce change in beliefs about teaching. Analysis of program results has indicated that students retained their pre-existing beliefs about teaching and learning irrespective of whether they were constructivist and critical or authoritarian and didactic. The permeability of the individual student's beliefs is considered, as well as questions on the effect that socialization agents, such as teacher preparation and entry into the culture of schooling, have on student teachers' implicit and explicit belief systems concerning the nature of teaching and learning. A list of 12 questions provides a basis for further research on evolving beliefs about teaching and their implications for preservice teacher education. (JD)

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EVOLVING BELIEFS ABOUT TEACHING AND LEARNING: THE VIEW FROM HOFSTRA UNIVERSITY:

I. A perspective on teachers' beliefs and their effects

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With respect to the issue of teachers' beliefs and their effects, there are two pitfalls of which we need to be especially wary. The first - and this certainly has been a problem historically - is to fail to give adequate recognition to the potential influence which teachers' prior beliefs may have on their learning and teaching. The second occurs when educational theorists, accepting the premise that teachers' preexisting beliefs influence what they learn about teaching and how they teach, err by conceptualizing teacher beliefs as simple cohesive systems which have a direct causal bearing on teachers' actions. The problem in the first case is that of ignoring an important psychological reality which needs to be understood and reckoned with. The danger in the second case is of proposing simple technical solutions to a complex problem. My primary purpose in this paper is to introduce the notion of teacher beliefs as complex ideological systems which likely have a complex bearing on actions, and which I suggest are in need of investigation from a wide range of perspectives. It may be helpful to begin by considering the following extracts from a statement of beliefs about teaching which was written by a female undergraduate student early in her sophomore year in a liberal arts college. She had completed one year of general liberal arts requirements, and was taking her first education courses toward certification in elementary education. Asked to explain why she wanted to become a teacher, she wrote, in part:

> **Education has always been part of my thoughts for the future. Being a teacher has intrigued me ever since I was a child. There were many influences in my life which caused this personal philosophy.**
>
> **Possibly the first influence was my actual teachers in my earlier years. I always respected my**

teachers and usually wanted to learn what they were

teaching to please them. For me, my teachers always seemed to be so full of knowledge and dignity. I guess I wanted to be as knowledgable and respected. Because I found school work so easy and liked it so much, I wanted someday to help other students do well in school; What better way than to teach? . . .

Asked to discuss the aims of education she wrote as follows:

I feel there are several aims of education in today's society. The first would be to help young children learn important knowledge to lead them to a bright and happy future. The second aim would be to evoke pride in what the student is doing, not only during school, but have it carry over to all assets [sic.] of their life. By having pride and faith in themselves, children will continue to succeed. The third aim would be for socialization. Children need to be around others their own age to learn, have fun, and take pride in themselves. The school is the perfect place for this. I think that these aims are the most important in education. . .

After responding in detail to some further questions, the student voluntarily added the following concluding paragraph to her statement:

These are my personal beliefs about how education and teaching should be. I strongly believe in them and I hope I can accomplish these goals when I become a teacher.

It would be trite to use extracts such as these to merely demonstrate that prospective teachers are not *tabula erasa* upon their initial entry into teacher education. We can all agree that our students come with predispositions, beliefs and expectations which have been acquired during their long apprenticeship in the culture of schools. Nevertheless this brief extract raises some of the fundamental questions about teacher beliefs and

their effects. For example, what is the significance of a beginning student declaring that she is already in possession of a fully worked out "personal philosophy" in which she "strongly believes", prior to being exposed to the canon of the discipline, if such exists?. Does it matter what the contents of her personal philosophy are? Does it matter that she holds it with such great conviction? Is it significant that her philosophy sounds nondialectical and nondilemmatic in nature? What if this student is representative and if it is primarily people like her, with a deferential attitude toward teachers, with a yearning for respect and authority, and with a wish to reproduce the educational system they remember so fondly, who are drawn to teaching? In what ways might we expect this teacher's philosophy to be influenced by her formal teacher preparation and by her return to school in the role of a teacher? Finally, what, if any, relationship is likely to exist between the explicit beliefs student teachers such as this one articulate and the implicit beliefs that will be evident in their attempts to teach?

The extract just presented also raises some important theoretical and methodological issues. To begin with, how reasonable is it to suggest that the preceding quotes exemplify a cohesive belief system? Since, in this particular case, the quotes have actually been edited from a longer transcript containing a diversity of ideas and opinions, this is probably not the case. This serves to remind us of the need to be cautious when judging apparently coherent belief statements which have been removed from context. If this extract were entirely consistent with the remainder of the student's belief statement, could we then state with reasonable certainty that we had discovered a coherent and unified belief system? More generally, what would need to be present before we could claim that a coherent and unified belief or a generalized belief system was in operation? Would our view of the student's beliefs change if we had posed

different questions, or if we had chosen to engage the student in an extensive oral interview? More fundamentally, what does it mean to say that someone is in possession of or influenced by a belief system? Do the systemic properties come from the presence of coherence and harmony, and the absence of discord, or is it the case, as Billig et al. (1988) claim in Ideological dilemmas, that belief systems are inherently dialectical, and that rather than seek coherence, we should examine people's attempts to recognize and address the dialectical and dilemmatic properties of most complex decisions, including those involved in making educational choices?

I will return to the general theoretical and methodological issues later. For now, accepting the existence of some types of predispositions or beliefs, what can we conclude about the implications of a student articulating a set of beliefs such as the one just quoted? What is remarkable historically - and to a large extent currently - is that mainstream teacher preparation programs have paid little if any attention to the beliefs and convictions students bring with them to teacher education as a result of their previous socialization in the culture of schools. Many critics have suggested that rather than assisting students in critically reflecting on the contents of their beliefs, the autobiographical origins of these beliefs, and the implications of subscribing to these particular beliefs for practice, teacher preparation programs often serve to confirm and reinforce student's initial, unexamined and unidimensional beliefs about teaching and learning (e.g, Britzman, 1986; Duckworth, 1984; Feinberg, 1985; Giroux,1985; Giroux & McLaren, 1986; Goodlad, 1983, 1984; Kliebard, 1975; Zeichner, 1983). The position is best summarized by Goodlad, writing in Kappan in 1983:

> ***Teachers teach as they were taught.*** **They employ the techniques and materials modeled during the 16 or more years they were students in schools. Relatively**

> **late in this learning through modeling, they experienced a modicum of professional preparation to teach - presented largely in the same telling mode to which they had become accustomed. . . Professional education is intended to immerse the neophyte in the state of the art and science of teaching and simultaneously to separate him or her from the myths and anachronisms of conventional practice. Teacher education appears to be organized and conducted to assure precisely the opposite (1983, p. 469).**

Greater insight into this process may be gained from Britzman's (1986) study of the influence of student teachers' biographies on their ways of thinking about teaching. Britzman begins by noting a commonplace that is certainly evident in the extract quoted earlier:

> **Prospective teachers, then, bring to their teacher education more than their desire to teach. They bring their implicit institutional biographies - the cumulative experience of school lives which, in turn, informs their knowledge of the student's world, of school structure, and of curriculum. All this contributes to well-worn and commonsensical images of the teacher's work and serves as the frame of reference for teachers' self-images (p.443).**

These "well-worn and commonsensical images" result from being recipients of a schooling that research by Goodlad (1984), Sizer (1984) and others tells us is predominantly authoritarian and didactic. Should we be surprised that students who have never experienced any way of knowing other than passive absorption of information, and who have never experienced any form of discipline in school other than authoritarianism, should nurture images of teaching that are consistent with these ideologies? The situation is exacerbated by the fact that many of the students who choose to become teachers probably <u>like school</u> and thus feel very comfortable with these values. In addition, as Britzman notes, students have constructed their images of teaching based on observations

of teaching, as viewed only from the student's side of the desk, and this results in the internalization of greatly simplified - and indeed mythical - images of teachers' work . Britzman suggests - and this surely sounds familiar to those of us who teach undergraduates - that many student teachers enter teacher education with very unreflective and passive ways of knowing, with well-developed beliefs about good teaching as the presentation of a polished, efficient, didactic performance, and with considerable anxiety about how to exert control and gain respect from students. The end result of this combination is a utilitarian desire to learn as many techniques as possible so that they can gain the security of knowing that they will be able to reproduce the traditional role of the teacher, with which they so strongly identify. Britzman summarizes the issue this way:

> **Prospective teachers, then, want, and expect to receive practical things, automatic and generic methods for immediate classroom application. They bring to their teacher education a search for recipes, and often a dominant concern with methods of classroom discipline because they are quite familiar with the teacher's role as social controller. . . The learning expectations brought to teacher education by these students resemble the images of learning cultivated in their compulsory school lives. There, learning took the form of a concrete product, something to be acquired, possessed and immediately applied (p.446-7).**

Elaborating on the critique alluded to above, Britzman argues that teacher education, with its foundation in behaviorism, with its heavy dependence on the student teaching apprenticeship as a primary agent of socialization, and with a technical and rational focus on prescriptive planning and teaching, serves to confirm students in their existing unexamined view of teaching, and offers them the simple technical

solutions they hunger after.

This process has not been a matter of indifference in the educational community and many educational theorists have expressed concern about the reproduction of inequity and the erosion of freedom that come with the continuance of a public educational system that many critical theorists agree is oppressive to so many in our society. Advocates of various forms of critical and feminist pedagogy, poststructuralist educational theorists and curriculum theorists who have been arguing for the reconceptual-ization of curriculum, have reached some common ground in arguing that there is a pressing need to reconceptualize teacher education as a process of promoting the critical consciousness of prospective teachers with respect to the origins and effects of their own institutional biographies, with respect to their current ways of knowing, and with respect to the possibility of schooling as a critical and emancipatory process so that as teachers, they may become reflective, empowered knowers who can then engage their students in similar reflective, emancipatory and empowering processes of coming to know for themselves (e.g., **for critical theory:** Berlak, 1988; 1989; Britzman, 1986; Freire, 1972/1989, 1973; Giroux, 1985; Giroux & McLaren, 1986; Greene, 1988; Shor, 1980; Shor & Freire, 1987; **for feminist pedagogy**: Cully & Portuges, 1985; Freedman, 1985; Laird, 1988; Maher, 1985; **for poststructuralism:** Cherryholmes, 1988; Ellsworth, 1989; **for curriculum theory**: Van Manen, 1977; Schubert, 1988).

This critical educational literature has made a positive contribution in opening discourse on the possibilities of teaching as a critical and emancipatory process. Unfortunately it is considerably easier to engage in critique than to formulate alternate pedagogical approaches, and it is likewise much easier to recommend alternate pedagogies than to implement and validate such approaches. A specific weakness of much of

the preceding literature is that it limits itself to critique - occassionally accompanied by suggestions or prescriptions - as to how teacher education might be construed. There is within this literature a significant subtradition of critically reflective autobiographical writing, in which authors describe their own struggles to teach in just this manner. While the latter (e.g., Berlak, 1988, 1989; Maher, 1985) is informative and useful in understanding some of the struggles involved in working with students to become critically conscious of their beliefs, it gives us little understanding of the kind of programmatic changes that will be necessary if teacher education is to change, and neither does it address issues of researching or validating an alternate approach to pedagogy.

The reflective teaching program which has evolved over the past ten years at the University of Wisconsin, Madison under the direction of Zeichner and colleagues represents perhaps the most ambitious attempt to implement a genuinely reflective curriculum seeking to induce change in beliefs about teaching. In terms of our need to problematize the notion of belief, and to develop a research agenda, it is instructive to examine its fate.

The explicit purpose of the Madison program, which is centered around the student teaching semester, is **"to seek to help student teachers become more aware of themselves and their environments in a way *that changes their perceptions of what is possible*"** (Zeichner & Liston, 1987, p. 25 - emphasis added). The program is explicitly constructivist in emphasis, seeking **"to prepare students of teaching who view knowledge and situations as problematic and socially constructed rather than certain"** (p. 26). The curriculum is designed to reflect this constructivist philosophy, and to be taught in an inquiry oriented manner. In terms of how this reflective curriculum is manifested in teaching outcomes during student teaching, Zeichner and colleagues

were torn between expecting their student teachers to be agents of change, who would restructure the curriculum and the student-teacher relationships in their classrooms, and the conflicting expectation of adapting to the classroom routine and mastering the existing curriculum in the interests of "successful teaching" within the parameters of the classroom. The compromise they arrived at is a rather uneasy and problematic one, as the following quote indicates:

> **Although student teachers are expected generally to follow the curriculum guidelines of their schools and the curricular programs in their classrooms, they are also expected to be aware of and be able to articulate the assumptions embedded in curricula that are adopted with little or no modification (assumptions about learners and the role of the teacher); to show evidence of adapting and modifying curricular plans and materials for specific situations; and to make original contributions to the classroom programs by creating new and varied instructional acitivities and materials beyond those specified in a given set of materials (p. 30)**

Given the difficult situation in which students were placed by this dilemma of having to demonstrate acquisition of and ownership of critical and constructivist beliefs about teaching and learning, and at the same time mastery of traditional curriculum and teaching practices, what did the students do? The results of a series of followup studies by Zeichner and colleagues are almost predictable. Zeichner and Liston summarize the results of one of their studies this way:

> **"Student teaching did not significantly alter the student teachers' views about teaching. Instead, after the semester-long experience, students, for the most part, became more skillful at articulating and implementing the perspectives they possessed in less developed forms at the beginning of the semester"** (p. 36).

In other words, students used the student teaching experience to confirm and elaborate preexisting beliefs sbout teaching and learning, irrespective of whether their initial beliefs were constructivist and critical or authoritarian and didactic. Contemplating a recurrence of similar findings in another study, Zeichner and Liston concluded that the inquiry-oriented program **"had little effect on student teachers' perspectives towards teaching"** (p. 36). Trying to draw what little comfort they could from these findings, and bearing in mind that earlier research had indicated that students often become more authoritarian in their views as a result of their sudden induction into the realities of student teaching, Zeichner and Liston argue that their reflective teaching program might take credit for stemming **"the onrushing move toward a more custodial view"** (p. 36). Clearly, this is small comfort for their efforts.

What is to account for these disheartening results? Zeichner and Liston, in a commendably reflexive analysis of their program, identify a variety of factors. Among these are political factors having to do with the funding structure of teacher preparation programs as well as structural factors to do with the organizational constraints of the program, such as, for example the high degree of turnover among student teaching supervisors, since all were also full-time graduate students. More important, for our purposes, Zeichner and Liston belatedly acknowledge that a one-semester course in student teaching is likely to prove a poor counterweight to the deeply embedded beliefs about teaching that students have accumulated as a result of their socialization into the culture and processes of schooling:

> **"Our experience has taught us that much unlearning has to go on before most student teachers are willing to accept the need for a more reflective approach to**

> **teaching. The time devoted to this task within a 15-week semester, may be far too brief to overcome the influence of prior experience and commonly-held expectations regarding the purposes of student teaching (p. 42).**

Zeichner and Liston also acknowledge that the teacher preparation program in Madison, just like most if not all other teacher preparation programs, is **"characterized by its ideological eclecticism and its structural fragmentation"**, (p. 43). While many professors may agree on their general subscription to the desirability of producing "reflective teachers", there is by no means unanimity as to what reflection means or how to go about accomplishing this goal. This problem, of course, is not confined to the Madison campus, as Noffke & Brennan (1988) have noted.

If agreement could be reached among the Madison faculty on the definition of reflection and if overall coordination within the supervisory process could be improved, could we expect the next generation of Madison teachers to be the kind of reflective, empowered knowers alluded to earlier? Perhaps, but I think not. What is lacking in the Madison program, I believe, is a fundamental recogntion of teacher belief as the essential problem. As I understand it, Zeichner and colleagues are striving to develop in students a form of rational, reflective action. Their perspective does not appear to acknowledge teachers' preexisting beliefs, and seems to assume that under certain pedagogical circumstances teachers can become rational enough to transcend these beliefs and act reasonably. Their own research, as well as the work of Britzman and others, and a distinguished literature in psychology (e.g., Nisbett & Ross, 1980) suggests that human thinking and action are not so easily influenced. Before people can transcend their own prior beliefs it would seem that they must first come to terms with what they believe, the origins of those beliefs and the social

consequences of holding these views. Second, the relationship between belief and action needs to be much more clearly thought out. Research in moral development, for example, tells us that there is no necesary relationship between moral judgment (i.e., what people profess ought to be done in a given situation) and moral action (i.e., what people do in the same situation) [e.g, see Weiss, 1982]. Is there any reason to think that it might be different for pedagogical beliefs?

In conclusion, although Zeichner and colleagues are to be commended for the scope and persistence of their effort, their work serves to highlight why research into teacher belief is so urgently needed. Basic questions such as the following need to be addressed: What do we mean by teacher beliefs? How might teacher beliefs be studied? How do teacher beliefs evolve and which of the interactions with socialization agencies such as teacher preparation programs and apprenticeship in the schools has the greatest influence on teacher beliefs, and why? What kinds of views about teaching and learning would we like our students to hold, and what kind of educational experiences lead to the requisite long-term changes in belief? I believe that in answering these questions we may arrive at a theoretically articulated and empirically supported alternative to the current technical and essentially thoughtless approach to teacher education.

Teacher beliefs: Problems of definition

My own understanding of the notion of teacher beliefs is still evolving and what follows depends heavily on earlier conceptual work by Sigel (1985) in a chapter entitled A conceptual analysis of beliefs, written to support his own research into the effects of parental belief systems on childrearing. Apart from Sigel's ideas, my own thinking about this issue

has been most influenced by the model of intellectual development proposed by Perry (1970), by the critical theory of Freire (1970), and most recently by the notion of ideology as dilemmatic, as proposed by Billig et al. in the book Ideological dilemmas (1988).

From a cognitive perspective, Sigel suggests that beliefs can be considered social constructions or categorizations of reality. Sigel distinguishes between evidentially based beliefs and those beliefs which are based on faith or conviction, noting that the latter are much less likely to be amenable to change. Drawing an analogy to schema theory, Sigel suggests that the boundaries which separate beliefs of varying kinds may vary in permeability, such that an individual can either develop an overall comprehensive, and unified system of beliefs with an underlying set of common values, or alternately an individual may have impermeable boundaries between categories, thus permitting incompatible beliefs in different domains. People with rigid boundaries around specific areas of belief are less likely to permit new information to influence their point of view. By way of example Sigel points out how little effect data from new scientific discoveries has on those persons who believe in creationism, or those who argue that intelligence is inherited. Sigel observes:

> **The issue of open boundaries is a critical one, not only in fields of science and research, but also in regard to therapeutic or educational efforts directed at consciousness raising regarding one's beliefs (p. 351)**

While the manner in which conscious beliefs are organized may lead to resistance to new ideas, the picture is further complicated, Sigel notes, by the presence of unconscious beliefs which **"in conjunction with conscious beliefs, can also be potent determinants of action"** (p. 350). In my own experience, for example, I have found that students will

never admit to race, class or gender prejudice if interrogated, but that deeply embedded prejudices and assumptions often emerge as we discuss individual incidents they have observed in classrooms. Even then, students typically deny that they hold negative expectations, while at the same time their whole way of viewing schooling is colored by the presence of these unconscious beliefs. As Freire's analysis of the **culture of silence** which characterizes the lives of oppressed people, reveals, consideration of unconscious beliefs has important pedagogical implications.

Regarding possible relationships between belief and action, Sigel suggests that a direct relationship might not be observable between what people say and how they act. However, if we inquire into people's beliefs about how a certain action ought be carried out, and consider this information too, we might find greater predictability between this how belief system and resulting action. Sigel points out that what beliefs on thier own are unlikely to predict actions closely because of their global nature, while how beliefs promise to reveal the individual's specific instantiation of their what beliefs.

In applying the foregoing ideas to research into parental belief systems, Sigel embeds his ideas about beliefs in a much larger theoretical matrix that he terms a structural model of beliefs . As I have noted elsewhere (O'Loughlin, 1989) , in a paper in which I attempted to extrapolate from Sigel's model to the teacher belief context, Sigel's model hypothesizes that the entire belief matrix is composed of a series of intereacting factors and components. Among these are (1) the structure of beliefs (i.e., based on conviction or evidence); (2) the origin or source of beliefs; (3) the effect of agents which - either intentionally or not - induce change in beliefs; (4) the kinds of core beliefs (= what beliefs) people hold about an issue (e.g., in this case the nature of teaching and learning), the degree of affect and intensity with which these beliefs are

held, and the presence or absence of evidence of systemic properties across beliefs in a variety of domains; (5) the kinds of beliefs about praxis (= how beliefs) people hold; (6) the instantiation of people's implicit theories, or theories-in-use (Schon, 1987) in their actions, (e.g., how teachers teach); and (7) the outcomes, in the specific case of teachers, in terms of affective, cognitive, epistemological and ideological outcomes for students.

Although I will explore specific research implications of Sigel's model of beliefs momentarily, some obvious research questions emerge from the issues that have been raised thus far. For example, in the context of teacher preparation, are the individual's belief about education evidentially based or what is their source? Is the individual's specific belief consistent with a more general or systemic belief system that he or she may hold about education, and about social, political, moral and other considerations more generally? Are the individual's beliefs in specific areas divided by rigid boundaries or is there a significant degree of permeability across boundaries? Is the individual apparently governed by implicit or unconscious beliefs? What is the relationship between the individual's what beliefs, the individual's how beliefs, and his or her actions in the classroom? What effect do socialization agents such as teacher preparation and entry into the culture of schooling have on student teachers implicit and explicit belief system concerning the nature of teaching and learning?

A particular concern with Sigel's model, however, is the impresssion it gives of the necessary coherence and unity of individual beliefs. A contrary viewpoint is expressed by Billig et al. in Ideological dilemmas (1988). Billig et al. are opposed to the reification of beliefs as **"ideational totalities"**, which are construed as having a high degree of inner coherence and consistency. Instead, Billig et al. prefer to think of the

ideas that underlie everyday thinking as ideologies which are composed of competing and conflicting dilemmas:

> **In stressing the dilemmatic aspects of ideology we hope to oppose the implications of both cognitive and ideological theory, which ignore the social nature of thinking. In contrast to the cognitive psychologists, we stress the *ideological* nature of thought; in contrasts to theorists of ideology, we stress the *thoughtful* nature of ideology. Ideology is not seen as a complete, unified system of beliefs which tells the individual how to react, feel and think. Instead ideology, and indeed common sense, are seen to comprise contrary themes. Without contrary themes individuals could neither puzzle over their social worlds nor experience dilemmas. And without this so much thought would be impossible (p. 2).**

In their book, in which dilemmatic aspects of everyday thinking in a variety of contexts are described, one chapter is focused on the thinking processes of teachers. They summarize the presence of ideological dilemmas in the everyday world of teachers as follows:

> **The contrary themes of equality and authority are identified in the thinking of teachers. Moreover, the dilemmatic contrast between these themes is represented in the classroom practice of teachers. Close observation of the ways in which teachers speak and behave in the classsroom reveals the balancing of democratic and authoritarian elements, as teachers attempt simultaneously to impart knowledge as well as elicit it from pupils. . . . The teachers are aware of the dilemmatic themes in their discourse on education for they themselves discuss the nature of education and the nature of their own role" (p. 5).**

The idea of dilemma adds another layer of complexity to the formulation of the notion of teacher belief. Billig et al. suggest that **"The**

characteristic of a dilemma which makes it significant for social analysis is that it is more complex than a simple choice or even a straightforward technical problem" (p. 163). If we can accept that thinking may be dilemmatic - or if it is not, that perhaps it ought to be - then we need to pay attention to the dialectic aspects of thinking, rather than seeking out simple coherence or consistency patterns. For readers familiar with Freire's work, there is an interesting parallell here, in that Freire argues in Pedagogy of the oppressed that the tension between freeedom and domination is the fundamental theme of contemporary Western civilization, and hence of Western schooling. While Freire favors "**education as the practice of freedom**", as he terms it, his work does not give full recognition to the necessarily dialectical nature of the dilemmatic tension we all experience in trying to put liberatory teaching into practice within the constraints of our educational institutions.

Finally, it is possible to think about the issue of belief from a developmental perspective. A s I read my student teachers' journals and as I reflect on the conversations we have in class as they struggle to make sense of the complex, multiplistic and critical view of education that we grapple with, I am constantly struck by the remarkable parallel between the intellectual and emotional struggles they go through and the kinds of struggles Perry (1970) documents in his classic study of the intellectual and ethical development of the Harvard undergraduates who were the subjects of his research in the late nineteen fifties and early nineteen sixties.

Perry's scheme describes intellectual development in terms of growth in understanding or in ways of knowing and construing the world. His developmental scheme charts the development of modes of understanding from basic dualism - in which the world is viewed in black-and-white

terms, in which all knowledge is beleived to emanate from experts, and in which authorities always can be relied on to have the right answer - through various forms of relativism in which a multiplicity of perpsectives is acknowledged, through to a form of committed knowing in which individuals balance their personal beliefs and commitments with serious consideration of alternative perspectives in developing a point of view. Another way to think about the changes that occur as people experience epistemological and intellectual development in the Perry sense is in terms of loss of innocence. Perry would suggest that through **"sustained groping, exploration and synthesis"** (p. 211) people lose the childlike innocence of seeing the world only through their own way of knowing, and instead come to appreciate the critical reflection and pluralism that leads them to become critical empowered knowers. Perhaps, in order to allow our students to develop critical and liberatory images of teaching, we must first understand this loss of innocence so that we can provide opportunities for them go beyond the tyranny of seeing the world only form a single unexamined viewpoint.

Implications for research

I do not intend to recap all of the individual research questions that were mentioned here and in my earlier (1989) paper. Instead, I would prefer to conclude by raising a few of the most general questions as a way of pointing out the scope of the inquiry that is needed and as a way of introducing the specific research project my coleagues will describe to you today:

1. How best might we construe teacher beliefs - as dilemmatic or as cohesive?

2. Could it be that there is a progression, with dilemmatic thinking being indicative of more complex

weighing of factors?

3. Where do student teachers beliefs originate, and what is it that distinguishes people with rigid belief systems from others who are open to change?

4. How early in students experience of schooling is there evidence of the types of beliefs we are so often encounter among our undergraduate students?

5. Is there a correlation between the style of teaching students are exposed to and the general "epistemological atmosphere" of their schools and the beliefs they articulate?

6. How best can one characterize core beliefs (=what beliefs), beliefs about praxis (=how beliefs) and implicit beliefs (="theories-in-use"), and what is the interrelationship between these belief areas?

7. What evidence is there that student teachers hold systemic beliefs, and if they do, what effect does this have on their receptivity to confirming or disconfirming perspectives?

8. What kind of developmental progression is evident in student teacher beliefs, under certain circumstances? Doe it approximate the model of intellectual and epistemological development presented by Perry?

9. Are there significant differences in the beliefs of undergraduate and graduate student teachers, and in their willingness to embrace contrary views about education?

10. What effect do teacher education professors' beliefs about teaching and learning have on the way they teach, and on what students take from their courses?

11. What is the relationship between the beliefs teachers hold and the epistemological, intellectual, emotional and ideological perspectives their students subsequently develop?

12. When we espouse value systems and goals, such as the desire that teachers become critical, constructivist, reflective and empowered knowers and teachers - as alluded to earlier - what kinds of changes in the various aspects of student teachers' beliefs would we expect, in order to know that we had accomplished our objective?

If I may conclude by having the luxury of expressing a belief that I need not justify, I would like to say that it is only when we have begun to address these various aspects of the belief problem theoretically and empirically that we can aspire to reconceptualizing the foundation of teacher educaiton as what I have termed elsewhere (O'Loughlin, 1989) a **critical-constructivist process.**

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